Hurley Creek /McKinley Lake Watershed Improvement Project

Creston, Iowa

Final Project Report

Project Number: 7020-007

Photo of stream bank stabilization project

Hurley Creek/McKinley Lake Watershed Improvement Project

Creston, Iowa

Final Project Report

Project Number: 7020-007

Table of Contents

Watershed Improvement Fund Project Final Report

Hurley Creek/McKinley Lake Watershed Improvement Project: 7020-007

Project Name: Hurley Creek/McKinley Lake Watershed Improvement Project

Project Sponsor: City of Creston

Length of Project: March 1, 2008 to February 28, 2011

Total WIRB Funds awarded for this project: $117,500

Project Number: 7020-007

Project Objectives

-Administer the Hurley Creek/McKinley Lake Watershed Improvement Project and work with all stakeholders to ensure all project objectives are implemented as scheduled.

- reduce by at least 50% the amount of annual erosion, which will help reduce sediment load, loss of property, and may improve water quality.

-Reduce E. coli levels to meet the designated use of McKinley Lake by controlling direct animal access, reducing animal waste runoff, and improving sanitary sewer systems.

-More effectively manage the storm water flow rate, which may reduce erosion and flooding and may improve water quality. Reduce storm water flow into Hurley Creek by at least 35%.

-Educate the public, including civic groups, homeowners, farmers, and business owners in the Hurley Creek Watershed about Best Management Practices and establish comprehensive education and communications strategies to promote environmental awareness.

Program Accountability

In 2004 a group of local concerned citizens determined a need and a desire to improve recreational opportunities and water quality in city owned McKinley Lake. The initial group evolved into the Hurley Creek/McKinley Lake Watershed Improvement Committee consisting of approximately twenty volunteers. The committee worked with an engineering firm to develop a long-term improvement plan for McKinley Park and McKinley Lake. The goal was to reduce contaminants, soil delivery, and nutrient inflow into the lake which would improve water quality. Educating the general public would be critical to the success of the project. An initial assessment and water sampling determined upstream improvements on Hurley Creek would be needed prior to the ultimate goal would be attained. The assessment identified problems with severe erosion, excessive storm water flow, high E. coli levels and uncontrolled livestock access to the creek.

One of the largest concerns was the condition of the stream bank primarily in the eastern section of Hurley Creek that runs through residential neighborhoods. Five sites were identified as needing stream bank stabilization. The work on those five sites resulted in 656 linear feet of stream bank stabilization which results in sediment delivery reduction of 167 t/y and reduction of 217 lb/y of phosphorus.

To continue the efforts to reduce erosion area were identified where 1405 linear feet of urban riparian buffer strips were planted and 375 linear feet of rural riparian buffer strips were planted. As a result of the buffer strips there was a sediment delivery reduction of 136 t/y.

The committee identified and met with three candidates about installing livestock crossings. Two of the property owners agreed and livestock crossing limiting animal access to the stream were installed, therefore reducing animal waste runoff into Hurley Creek/ McKinley Lake.

The City of Creston has rehabilitated or replaced 23,192 feet of sanitary sewer mains and more than 30 manholes in the watershed. Results of E. coli testing in 2007 show 2997 pts/dL, results from 2010 show 1515 pts/dL, and results from 2012 show 700 pts/dL. Results of chloride testing in 2010 show <25 mg/L compared to 2012 results 4.6 mg/L. The city also increased the number and frequency of inspections of sanitary sewer mains with the acquisition of a new jet truck that is equipped with televising equipment. The city is committed to continue sanitary sewer infrastructure repair/replacement.

The committee chose to address storm water with several practices. Iowa State University Extension partnered with the committee to promote and educate the general public about the benefits of rain gardens. With the help of ISU Extension plants were acquired and planted on six private properties and two public properties. Another partner, our local soil and water conservation office, NRCS office, helped the committee identify two possible locations for storm water detention ponds. After studying the proposed locations one site was deemed not feasible. A detention pound was built on property owned by Greater Regional Medical Center. This pond is in the Hurley Creek watershed above McKinley Lake. As the result of promotion of controlling storm water runoff and the desire to capture rain water Innovative Industries, a local workshop designed, built and sold rain barrel and continues to do so.

Educating the general public, civic groups, farmers, and homeowners was important to the success of the project. The education subcommittee did a great job of informing the community of the progress of the project but also strategies to promote environmental awareness. The subcommittee promoted the project using our local radio station and local newspaper. Several articles were published in the local newspaper, and printed in the Union County Soil and Water Conservation District's annual report. Iowa State University Extension News also referenced the Hurley Creek/McKinley Lake Watershed improvement rain gardens in a Master Gardener Demonstration news article. Walking tours were given and demonstrations were presented for those interested in rain gardens and buffer strips.

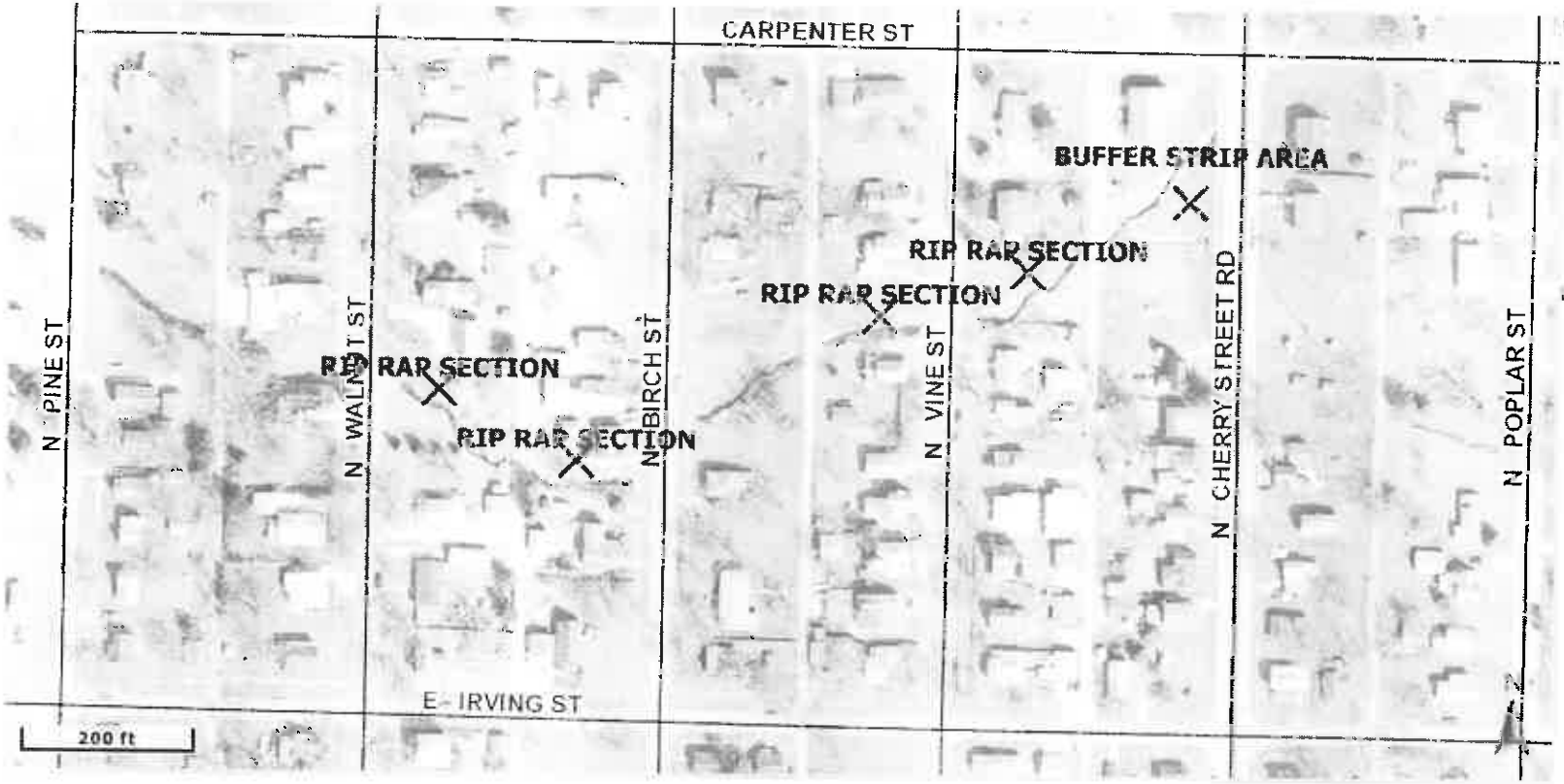
Another way we chose to educate the general public was to stencil/paint storm water intakes. This project was an effort by Creston boys and girls scout troops. A Hurley Creek/McKinley Lake Water Quality Project website was setup, maintained and linked to the Creston Chamber of Commerce website.

One of the most exciting things that started in conjunction with the Hurley Creek/McKinley Lake Watershed Improvement Project was an "Annual Cleanup" of Hurley Creek and McKinley Lake.

The Creston Community Schools and Southwestern Community College have allowed the teachers and students to volunteer each spring to pick up trash, debris, etc. along and in Hurley Creek and McKinley Lake. Results of the cleanup effort removed 4374 lbs. in 2009 and 1015 lbs. in 2010. The "Annual Cleanup" has continued yearly and a Saturday has been designated for community volunteers to get involved.

HURLEY CREEK STABILIZATION EAST

Date Created: 12/05/2012



Last Data Upload: 12/5/2012 11:00:19 PM

Union County, IA

beacon™

HURLEY CREEK STABILIZATION WEST

Date Created: 12/26/2012

Last Data Upload: 12/26/2012 11:06:15 PM

developed by
The Schneider Corporation
www.schneidercorp.com

Photos of property in need of stream bank stabilization.

Photos of property after completion of stream bank stabilization.

Photo of property in need of stream bank stabilization.

Photo of property after completion of stream bank stabilization.

Diagram of livestock stream crossing and buffer strips

Conservation Plan Map

Date: 10/3/2008

Customer(s): Steve Tilley

District: UNION SOIL & WATER CONSERVATION DISTRICT

Legal Description: Sec. 1 T72N R31W Douglas Twsp
Tract 50002 Creston City Limits

Field Office: CRESTON SERVICE CENTER

Agency: USDA/NRCS

Assisted By: Karla M Horihan

State and County: IA, UNION

Photo of storm water detention pond at GRMC.

Photo from Hurley Creek /McKinley Lake Watershed "Cleanup Day"

Photo from Hurley Creek and McKinley Lake Watershed "Cleanup Day"


Photo from McKinley Lake "Cleanup Day"

FINANCE ACCOUNTABILITY

TABLE 1
HURLEY CREEK/MCKINLEY LAKE WATERSHED IMPROVEMENT FUNDS

GRANT AGREEMENT BUDGET LINE ITEM	TOTAL FUNDS APPROVED $ PER ORIGINAL AGREEMENT	TOTAL FUNDS APPROVED BY AMENDMENT $	TOTAL FUNDS EXPENDED $	AVAILABLE FUND $
Project Management	11,520.00	11,520.00	672.00	10,848.00
Riparian Buffer Strip (Urban)	14,050.00	8,050.00	7,392.60	657.40
Riparian Buffer Strip (Rural)	11,250.00	6,250.00	2,389.66	3,860.34
Streambank Stabilization	14,800.00	47,800.00	56,036.05	-8,236.05
Livestock Crossing	17,750.00	7,750.00	2,506.30	5,243.70
Rain Garden – Residential	22,000.00	10,000.00	3,362.66	6,637.34
Storm Water Detention Ponds	23,630.00	19,630.00	0.00	19,630.00
Stream Channel & Bank Stabilization	2,250.00	2,250.00	0.00	2,250.00
Erosion Control Matting	250.00	250.00	0.00	250.00
Water & Sediment Control Basins (no)	0.00	3,000.00	0.00	3,000.00
Grass Waterway (ac)	0.00	1,000.00	0.00	1,000.00
Totals	117,500.00	117,500.00	72,359.27	45,140.73

TABLE 2
TOTAL PROJECT FUNDING

Funding Source	Cash		In-Kind Contributions		Total	
	Approved Application Budget ($)	Actual ($)	Approved Application Budget ($)	Actual ($)	Approved Application Budget ($)	Actual ($)
WIRB	117,500.00	72,359.27		0.00	117,500.00	72,359.27
City of Creston		0.00	18,600.00	0.00	18,600.00	0.00
Union SWCD		0.00	1,700.00	103.50	1,700.00	103.50
Partners		0.00		862.50		862.50
EPA Grant		0.00		0.00		0.00
IFIP		0.00		0.00		0.00
CRP		0.00		0.00		0.00
REAP		0.00		0.00		0.00
Matching (Cash)		0.00		0.00		0.00
Matching (In-Kind)		0.00	15,300.00	27,069.95	15,300.00	27,069.95
Other (1)		0.00		1,152.00		1,152.00
Other (2)	10,500.00	0.00		1,500.00	10,500.00	1,500.00
Recipient/Landowners	42,150.00	0.00		45,598.95	42,150.00	45,598.95
TOTALS	**170,150.00**	**72,359.27**	**35,600.00**	**76,286.90**	**205,750.00**	**148,646.17**

WIRB Contribution: WIRB Application = 57 % Actual = 48 %

ENVIRONMENTAL ACCOUNTABILITY

TABLE 3
PRACTICES AND ACTIVITIES

Practice or Activity	Unit	Approved Application Goal	Accomplishments	Percent Completion
Riparian Buffer Strip (Urban)	Linear Ft.	1000 Ft.	1405 Ft.	140.5%
Riparian Buffer Strip (Rural)	Linear Ft.	500 Ft.	375 Ft.	75%
Streambank Stabilization	Linear Ft.	400 Ft.	656 Ft.	164%
Livestock Crossing	Sites	1	2	200%
Rain Garden - Residential	Sites	18	8	44.40%
Storm Water Detention Ponds	Basins	2	1	50%
Stream Channel & Bank Stabilization	Sites	6	6	100%
Erosion Control Matting	Sq. Ft.	500 Sq. Ft.	0	0%
Water & Sediment Control Basins (no)	Sites	1	0	0%
Grass Waterway (ac)	Acres	0.4	0	0%
Educational Events & Promotion	Each		10	100%

TABLE 4
ENVIRONMENTAL IMPACT

Practice or Activity	Rain Garden	Streambank Stabilzation	Livestock Crossings	Buffer Strips	Totals
Sediment Reduction (t/y)	0	167	11	141	319
Nitrogen Reduction (lb./y)	0				
Phosphorus Reduction (lb./y)	0	217	14	183	414